

ABSTRAK

PENGARUH PEMBERIAN *L-ARGININE* TERHADAP  
DIAMETER ARTERI SPIRALIS DAN BERAT BADAN JANIN  
PADA MENCIT BUNTING NORMAL DAN  
MENCIT BUNTING MODEL PREEKLAMPSIA

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**Tujuan:** Mengetahui pengaruh *L-Arginine* terhadap diameter arteri spiralis dan berat badan janin pada mencit bunting normal dan mencit bunting model preeklampsia.

**Metode:** Desain penelitian ini *true experimental, randomized post test only, control group*, menggunakan 27 ekor mencit jenis *Mus musculus* galur Swiss yang memenuhi kriteria inklusi dan eksklusi, yang kemudian dibagi menjadi 3 kelompok, yaitu kelompok mencit bunting normal (P), kelompok mencit model preeklampsia (K+), dan kelompok mencit bunting model preeklampsia yang diberi *L-Arginine* (P). Peneliti menghitung rerata berat badan janin dari tiap mencit dan pengukuran diameter arteri spiralis dari sediaan plasenta, yang telah diproses menjadi blok parafin dan diwarnai Hematoxylin dan Eosin. Hasil pengukuran kemudian dianalisis dengan SPSS 25 dengan uji T tidak berpasangan dan *Kruskal-Wallis*.

**Hasil:** Didapatkan rerata diameter arteri spiralis pada kelompok (K-)  $221,7500 \pm 70,2498 \mu\text{m}$ , (K+)  $159,4333 \pm 30,2653 \mu\text{m}$ , dan (P)  $277,3222 \pm 54,5503 \mu\text{m}$ . Didapatkan perbedaan bermakna secara statistik antara kelompok (K-) dan (K+) ( $p=0,024$ ), antara kelompok (K-) dan (P) ( $p=0,047$ ), dan antara kelompok (K+) dan (P) ( $p=0,000$ ). Sedangkan untuk rerata berat badan janin didapatkan pada kelompok (K-)  $0,6733 \pm 0,3145\text{g}$ , (K+)  $0,6222 \pm 0,2838\text{g}$ , dan (P)  $0,7589 \pm 0,3444\text{g}$ . Tidak didapatkan perbedaan bermakna secara statistik antara kelompok (K-) dan (K+) ( $p=0,722$ ), antara kelompok (K-) dan (P) ( $p=0,590$ ), dan antara kelompok (K+) dan (P) ( $p=0,372$ ).

**Kesimpulan:** *L-Arginine* sebagai prekursor NO terbukti efektif untuk memperbaiki kerusakan endotel dan pada penelitian ini adalah dilihat dari diameter arteri spiralis dan berat badan janin pada mencit bunting model preeklampsia yang diberi *L-Arginine*

**Kata kunci:** *L-Arginine*, preeklampsia, arteri spiralis, berat badan janin

**ABSTRACT**

**THE EFFECT OF *L-ARGININE*  
ON DIAMETER OF SPIRAL ARTERY AND FETAL WEIGHT  
BETWEEN NORMAL PREGNANT MICE  
AND PREECLAMPSIA MICE MODEL**

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**Objective:** To determine the effect of L-Arginine on the diameter of the spiralis artery and fetal weight in normal pregnant mice and preeclampsia mice model.

**Method:** The design of this study was true experimental, randomized post-test only, control group, using Swiss *Mus musculus* strains that met the inclusion and exclusion criteria. The study sample was divided into 3 groups, there were normal pregnant mice group (K-), preeclampsia mice model group (K+), and preeclampsia mice model with L-Arginine group (P). Researchers calculated the mean of fetal weight of each mouse and measured the diameter of the spiralis artery from mice placentals, which processed into paraffin blocks and stained with Hematoxylin and Eosin. The measurement results were analyzed with SPSS 25 with unpaired T test and Kruskal-Wallis.

**Result:** The mean diameter of the spiral arteries was obtained in the group (K-) 221.7500 + 70.2498 $\mu$ m, (K +) 159.4333 + 30.2653 $\mu$ m, and (P) 277.3222 + 54.5503 $\mu$ m. Statistically significant differences were obtained between groups (K-) and (K +) ( $p=0.024$ ), between groups (K-) and (P) ( $p = 0.047$ ), and between groups (K +) and (P) ( $p = 0,000$ ). Meanwhile, from mean fetal weight were obtained in the group (K-) 0.6733 + 0.3145g, (K +) 0.6222 + 0.2838g, and (P) 0.7589 + 0.3444g. There were no statistically significant differences between groups (K-) and (K +) ( $p = 0.722$ ), between groups (K-) and (P) ( $p = 0.590$ ), and between groups (K +) and (P) ( $p = 0.372$ ).

**Conclusion:** L-Arginine as NO precursor has been proven effective in repairing endothelial damage and in this study was seen from the diameter of the spiralis artery and fetal weight in preeclampsia mice model.

**Keywords:** L-Arginine, preeclampsia, spiral artery, fetal weight